



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,514	09/13/1999	TAKAO OGAWA	0102/0074	4339

21395 7590 10/01/2004

LOUIS WOO
LAW OFFICE OF LOUIS WOO
717 NORTH FAYETTE STREET
ALEXANDRIA, VA 22314

EXAMINER

COLON, CATHERINE M

ART UNIT PAPER NUMBER

3623

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/394,514

Applicant(s)

OGAWA ET AL.

Examiner

C. Michelle Colon

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 19, 2004 has been entered.

Claims 1, 3-10 are now pending in this application.

Response to Amendment

2. Applicant's amendments to claims 1 and 6 are acknowledged. Applicant's cancellation of claim 2 is acknowledged.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

Art Unit: 3623

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 6-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Ono et al. (U.S. 5,686,906).

As per claim 1, Ono et al. discloses an ETC (electronic toll collection) system comprising:

an antenna having a predetermined directivity for providing a limited radio-communication service zone (col. 7, lines 35-43; col. 8, lines 30-45; items 3 and 5 in Figure 1; The system includes an antenna for communicating with an on-board vehicle unit. The antenna has a predetermined directivity.);

a vehicle sensor positioned at a location closer to oncoming vehicles than said antenna by a predetermined interval for detecting a vehicle which reaches a predetermined position in the limited radio-communication service zone, the predetermined position being defined by the location of the vehicle sensor (col. 7, lines 6-34; col. 9, lines 49-57; item 2 in Figure 1; The system discloses a vehicle sensor for detecting the front end of an oncoming vehicle as the vehicle enters a predetermined position of the antenna's radio-communication service zone.);

first means for continuously transmitting a radio signal via the antenna independently of whether or not the vehicle sensor detects the vehicle (col. 7, lines 35-43; col. 8, lines 30-45; col. 9, lines 1-9; items 3 and 5 in Figure 1; The system discloses

Art Unit: 3623

the antenna transmitting a radio signal independently of the vehicle sensor detecting a vehicle.);

second means for deciding whether or not a radio response to the radio signal is received via the antenna (col. 7, lines 35-65; item 7 in Figure 1; The radio communication control unit determines whether or not a radio response to the radio signal is received via the antenna.);

third means for, in cases where the second means decides that a radio response to the radio signal is received, judging that there is an ETC vehicle coming into the limited radio-communication service zone, and fourth means for, in cases where the vehicle sensor detects a vehicle while the second means decides that a radio response to the radio signal is not received, judging that there is a non-ETC vehicle coming into the limited radio-communication service zone (col. 7, line 66-col. 8, line 5; col. 9, lines 13-48; col. 10, lines 45-67; The system has a decision unit to that determines whether or not a vehicle is an ETC vehicle based on data received from the vehicle sensor control unit and the radio communication control unit.).

As per claim 6, Ono et al. discloses an ETC (electronic toll collection) system, comprising:

an antenna having a predetermined directivity for providing a limited radio-communication service zone (col. 7, lines 35-43; col. 8, lines 30-45; items 3 and 5 in Figure 1; The system includes an antenna for communicating with an on-board vehicle unit. The antenna has a predetermined directivity.);

a vehicle sensor positioned at a location closer to oncoming vehicles than said antenna by a predetermined interval for detecting whether a vehicle has reached a predetermined position in said limited radio-communication zone, the predetermined position being defined by the location of the vehicle sensor (col. 7, lines 6-34; col. 9, lines 49-57; item 2 in Figure 1; The system discloses a vehicle sensor for detecting the front end of an oncoming vehicle as the vehicle enters a predetermined position of the antenna's radio-communication service zone.);

transceiver means working cooperatively with said antenna for continuously transmitting a radio signal at a given rating level to cover the limited radio-communication service zone independently of whether or not the vehicle sensor detects a vehicle and for detecting a radio response to said radio signal from each vehicle detected by said vehicle sensor within said radio-communication service zone (col. 7, lines 35-43; col. 8, lines 30-45; col. 9, lines 1-9; items 3 and 5 in Figure 1; The system discloses the antenna transmitting a radio signal independently of the vehicle sensor detecting a vehicle); and

processor means for deciding a vehicle that has been detected by said vehicle sensor in said radio-communication zone is a non-ETC vehicle if no radio response to said radio signal is detected from said vehicle (col. 7, line 66-col. 8, line 5; col. 9, lines 13-48; col. 10, lines 45-67; The system has a decision unit to that determines whether or not a vehicle is an ETC vehicle based on data received from the vehicle sensor control unit and the radio communication control unit.).

As per claim 7, Ono et al. discloses an ETC system as recited in claim 6, wherein said processor means decides a vehicle that has been detected by said vehicle sensor in said radio-communication zone is an ETC vehicle if a radio response to said radio signal is detected from said vehicle (col. 7, line 66-col. 8, line 5; col. 9, lines 13-48; col. 10, lines 45-67; The system has a decision unit to that determines whether or not a vehicle is an ETC vehicle based on data received from the vehicle sensor control unit and the radio communication control unit.).

As per claim 8, Ono et al. discloses an ETC system as recited in claim 1, wherein the antenna is one in number (col. 7, lines 35-43; col. 8, lines 30-45; items 3 and 5 in Figure 1; The system includes an antenna for communicating with an on-board vehicle unit. The antenna has a predetermined directivity.).

As per claims 9 and 10, Ono et al. discloses an ETC system as recited in claims 1 and 6, wherein the antenna comprises a matrix array of antenna elements (col. 7, lines 35-43; col. 8, lines 30-45; items 3 and 5 in Figure 1; The antenna includes several elements such as a predetermined directivity of the radio-communication service zone, a width direction of the road surface for the radio-communication service zone, and an antenna ID.).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (U.S. 5,686,906).

As per claims 3 and 4, Ono et al. does not expressly disclose an ETC system as recited in claim 1, wherein the limited radio-communication service zone has a length greater than a length of a standard vehicle and smaller than twice the length of said vehicle, or a length of about 6.5m along a lane. However, Ono et al. does disclose the importance of ensuring the vehicle that is detected by the vehicle sensor is also the vehicle whose radio signal was received (if one was received) in order for accuracy of data and thus, performance of the system (col. 9, lines 49-57; col. 14, lines 43-54). Thus, indicating a length of the radio-communication service zone is merely another way to ensure accuracy of data in the system, and is therefore, mere design choice. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the limited radio-communication service zone be of specified dimensions because doing so ensures that the toll radio signal is communicating with the appropriate vehicle at the appropriate location, thus providing accuracy of data and of system performance.

As per claim 5, Ono et al. does not expressly disclose an ETC system as recited in claim 1, wherein the vehicle sensor is only one in the ETC system. However, Ono et al. discloses only one "entry" sensor, which first detects the presence of an oncoming vehicle and triggers the radio signals of the antennae (item 2 in Figure 1). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use only one vehicle sensor in the system because that is all that is necessary to initially detect the presence of an oncoming vehicle.

Response to Arguments

7. Applicant's arguments are moot in view of the new grounds of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Eguchi et al. (U.S. 5,705,996) discusses a toll collection system;
- Hassett (U.S. 5,805,082) discusses an electronic vehicle toll collection system;
- Swett (U.S. 5,101,200) discusses a fast lane credit card.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Michelle Colon whose telephone number is 703-605-4251. The examiner can normally be reached Monday – Friday from 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz, can be reached at 703-305-9643.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D.C. 20231

or faxed to:

703-872-9306 [Official Communications; including After Final
communications labeled "Box AF"]

703-746-7202 [For status inquiries, draft communication, labeled
"Proposed" or "Draft"]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA 7th floor receptionist.


smc

September 24, 2004


TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600